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ABSTRACT

Advanced Placement (AP) participation and examination performance data are important in understanding the extent to which Texas students have completed courses that may qualify them for a "head start"--advanced standing, course credit, or both standing and credit--upon beginning college or university course work. A brief history and overview of the College Board AP program is presented in this report, along with a general description of AP courses and examinations, AP benefits and costs, Texas high school graduation requirements with AP components, and college and university AP policies. In addition, recent efforts contributing to increased policy and research interest in Texas AP examination performance, such as the Texas Advanced Placement Incentive Program and national and regional reports of AP examination data, are covered. National and Texas AP participation and performance data provide a backdrop for discussion of issues related to reporting of AP indicator data. Trends in national and Texas AP participation and performance are presented. Texas AP participation and performance are also examined in relation to student demographic characteristics and course-taking patterns, and campus and district characteristics. The report concludes with a discussion of statutory considerations for adopting AP indicators, other potential avenues for AP results reporting and research, and basic considerations for AP results interpretation and reporting. One finding is that, although the cost of AP examinations is less of an issue than it once was, examination fee costs are still a potential barrier to campus or district participation rates. Another finding from Texas data is that small schools and small districts typically have lower AP examination participation than large schools and districts. (Contains 8 tables, 6 figures, and 34 references.) (Author/SLD)

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Reporting Texas Advanced Placement Examination Performance: Promoting a Head Start on the Transition to College

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National and Texas AP participation and performance data provide a backdrop for discussion of issues related to reporting of AP indicator data. Trends in national and Texas AP participation and performance are presented. Texas AP participation and performance are also examined in relation to student demographic characteristics and course-taking patterns, and campus and district characteristics. The report concludes with a discussion of statutory considerations for adopting AP indicators, other potential avenues for AP results reporting and research, and basic considerations for AP results interpretation and reporting.

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Reporting Texas AP Examination Performance: Promoting a Head Start on the Transition to College

The concept behind the College Board's Advanced Placement Program® (AP Program) is to provide college-level courses and examinations to high school students and thereby ease the transition to college (CEEB & ETS, 1994). The College Board outlines introductory college curricula, offers support materials and professional development to high schools, and designs and administers the AP examinations nationally as part of the AP program (CEEB & ETS, 1994). In addition, it advocates higher education policies that provide college credit or advanced placement to students achieving a sufficiently high AP examination grade — generally 3 or higher on a 1- to 5-point scale.

College Board sponsorship of the AP program began in 1954, and the first examinations were administered in May 1956 (CEEB, 1995d). By 1993-94, the AP program had grown to include 29 courses and examinations in 16 disciplines (CEEB & ETS, 1994). Some 2,900 institutions of higher education allow advanced placement or credit for successful AP examination scores (CEEB, 1995d).

This report focuses on AP examination participation and performance by Texas public school students. Background information on AP courses and examinations, including benefits and costs, is provided, along with information on Texas high school graduation programs (of which AP is a component) and college and university AP policies. The Texas Advanced Placement Incentive Program and national reporting of AP performance, both of which provide an impetus for increased participation and improved performance, are described. National and Texas AP examination participation and performance data provide a backdrop for discussion of issues related to reporting of AP indicator data.

AP Courses and Examinations

AP courses are developed locally based on course descriptions and other materials provided by the College Board to interested schools. AP teachers typically supplement textbook and College Board course description materials with other materials, special studies, student presentations, and other student performance activities (CEEB, 1993c). In addition, instructional approaches used in AP courses can include student-centered seminars with student presentations and instructor-guided discussion on supplementary readings and outside projects. AP teachers can receive training relevant to the content covered in AP courses and on AP examinations, relevant teaching strategies, and types of resource materials available from summer institutes set up and administered by colleges, universities, school districts, and other entities. During the school year, the College Board also offers one-day and two-day professional development workshops for new and experienced AP teachers.

Table 1 on page 2 shows current AP examinations, corresponding AP courses offered in Texas public schools, and 1993-94 recommendations by the American Council on Education (ACE) (CEEB & ETS, 1994) for minimum college credit hours to be granted for AP examination grades of 3 or higher.

Except for the two Studio Art examinations, which require a portfolio of work from students, AP examinations consist of both multiple-choice items for breadth of content coverage and free-response questions that "allow students to demonstrate depth of understanding and an ability to organize and present ideas" (CEEB & ETS, 1994, p.16). Free-response questions may require essay responses, analysis of historical documents, oral language listening and speaking fluency, and completion of problem-solving tasks. Annual AP examinations are developed by committees that include discipline experts from college faculty and teachers of the relevant high school AP courses. Development periods for annual examinations span two or more years. The development committees also formulate AP course descriptions in each subject area.

which they review and revise every two years to ensure that current thinking about course content and instructional reforms, such as technological advances, are being reflected. Following are examples of recent changes in the disciplines that have resulted in changes to AP courses and examinations: introduction of scientific calculators in Calculus, Chemistry, and Physics courses and examinations and graphing calculators in Calculus courses and examinations; emphasis on longer, more complex problems from case studies used in Computer Sciences courses and examinations; and inclusion of a laboratory-based essay item in the Biology examinations reflecting more focus on analysis and experimental design in the courses.

In addition to these approaches to ensure the content validity of AP examinations, the AP program employs established educational measurement practices to ensure that AP grades are valid measures of college-level performance. These include

- using psychometric procedures in designing and analyzing AP examinations so that they reliably measure college-level achievement.

Table 1
AP Examinations, Texas Public School Courses, and Minimum College Credit Hours Recommended

AP Exam	AP Course in PEIMS	Recommended Minimum Credit Hours
History of Art	A3500100 History of Art	6
Studio Art — Drawing Portfolio	A3500300 Studio Art - Drawing (1 unit)	6
Studio Art — General Portfolio	A3500200 Studio Art - General	6
Biology	A3010100 General Biology (1 unit)	8
Chemistry	A3020100 Chemistry	8
Computer Science A	A3580100 Computer Science I (1 unit)	3–4
Computer Science AB	A3580200 Computer Science II (1 unit)	6–8
Economics — Macroeconomics	A3310200 Macroeconomics	3
Economics — Microeconomics	A3310100 Microeconomics	3
English Language and Composition	A3220100 English Language & Composition	6
English Literature and Composition	A3220200 English Literature & Composition	6
French Language	A3410100 French Language	6–8
French Literature	A3410200 French Literature	6–12
German Language	A3420100 German Language	6–8
Government and Politics — Comparative	A3330200 Comparative Government & Politics	3
Government and Politics — United States	A3330100 U.S. Government & Politics	3
History — European	A3340200 European History	6
History — United States	A3340100 U.S. History	6
Latin Literature	A3430200 Latin (Catullus-Horace)	6–8
Latin — Vergil	A3430100 Latin (Vergil)	6–8
Mathematics — Calculus AB	A3100100 Calculus AB or BC	3–4
Mathematics — Calculus BC	A3100100 Calculus AB or BC	6–8
Music Theory	A3150200 Music Theory	6
Physics B	A3030100 Physics B	6–8
Physics C — Mechanics	A3030200 Physics C	3–4
Physics C — Electricity and Magnetism	A3030200 Physics C	3–4
Psychology	A3350100 Introductory Psychology	3
Spanish Language	A3440100 Spanish Language	6–8
Spanish Literature	A3440200 Spanish Literature	6–12

Data Sources: CEEB and ETS (1994); TEA PEIMS (1995) for Texas AP courses; and ACE (cited in CEEB and ETS, 1994) for recommended minimum college credit hours for qualifying AP examination scores.

- guiding training of college faculty and AP teachers in the reliable application of college-level scoring standards for the free-response items,

- evaluating and comparing the performance of college students taking AP examinations upon completion of relevant college courses to that of high school students taking AP examinations upon AP course completion, and

- studying the performance of AP versus non-AP students in relevant sequences of college courses (CEEB & ETS, 1994).

AP Benefits and Costs

According to the College Board (CEEB, 1993c, 1995b; CEEB & ETS, 1994), the AP program benefits students, teachers, secondary schools, and colleges and universities in a number of ways. For instance, AP participation provides students the opportunity to study certain academic subjects in greater depth and to develop analytical and other study skills that can contribute to college-level success. AP can also enrich academic experience because, via the external review of AP examinations, students are provided a basis for comparing their own achievement to that of their peers, which can motivate and give examinees the confidence to manage academic challenges in college. Most obviously, students with sufficiently high AP examination grades can receive college credit or advanced placement, depending on policies of the college or university they attend. In a longitudinal study reported by Willingham and Morris (1986), AP students tended to be better prepared for college than their non-AP peers and were more likely to graduate from college with double majors and to be admitted to doctoral programs.

For secondary teachers, AP introduces opportunities for professional development through written materials provided by the College Board and the workshops it sponsors, as well as the chance to teach challenging subjects to able, motivated students. For secondary schools, AP helps enrich the academic curriculum and enhances the quality and reputation of college preparatory programs. For colleges and universities, AP provides a means to identify and recruit students who have successfully met demands in challenging college-level courses; moreover, AP provides admissions officers with another important predictor of student success in college.

To participate in the AP program, secondary schools must indicate willingness to institute the courses, encourage teacher training and professional development, and administer the AP examinations (CEEB, 1995b). No fee is charged to schools for participating in the AP program, but some expenses may accrue for course materials, textbooks, and professional development. For students taking the AP examinations, a fee of $72 is charged per examination; however, the College Board will reduce this fee by $22 for students in financial need and encourages districts to waive the $7 administrative fee that is included in the total examination cost. In addition, beginning in 1995 the Texas Advanced Placement Incentive Program can provide a $25 examination fee subsidy for students in financial need. Thus, the cost to students in financial need is as low as $18 per examination. Of course, the potential bonus to students is the savings on tuition costs if the college they attend awards credit for acceptable AP examination grades.

High School Graduation Requirements

Currently, State Board of Education (SBOE) rules and policy establish five levels of requirements for graduation from a Texas public high school, some of which have AP components. Rules on all levels of graduation requirements are subject to review for readoption by the SBOE by September 1996. The minimum graduation requirements are 21 credits earned across the disciplines of English language arts, mathematics, science, social studies, economics, physical education, health education, and from elective courses (19 TAC §75.151). These minimum graduation requirements were adopted in 1984 and last revised in 1989.

The advanced high school program requires 22 credits, but credit must be earned in additional disciplines including other languages, computer science, and fine arts or speech. In the advanced high school honors program, 5 of the 22 credits must be from state-approved honors courses, which include all College Board AP and International Baccalaureate (IB) courses. The advanced high school program was adopted in 1984 and last revised in 1995 (19 TAC §75.152).

In 1993, the SBOE approved a recommended high school program that includes a 21-credit academic core curriculum, plus a 3-credit elective course component selected from one of three areas of specialization — mathematics and science, career and technology, or college preparatory (SBOE, 1993). The recommended high school program was not previously required by law and has not yet been adopted as SBOE rule. It represents a standard core curriculum for all students in excess of the minimum graduation requirements (TEA, 1995c). Demonstrated proficiencies

on appropriate end-of-course assessments, such as AP and IB examinations, as well as AP and IB courses may be used to satisfy requirements of the recommended high school program but are not required.

The distinguished achievement program, which will replace the advanced high school program, builds on the recommended high school program. In addition to the requirements of the recommended high school program, the distinguished achievement program requires high performance on four advanced measures that are equivalent to college or professional level work (TEA, 1995c). Advanced measures approved by the SBOE as meeting those high performance standards are (a) original research and/or a project judged by a panel of experts or directed by mentors and reported to an appropriate audience; (b) test scores of 3 or above on an AP examination, 4 or above on an IB examination, or a Preliminary Scholastic Assessment Test (PSAT) score qualifying for national recognition; (c) college courses that count for dual or concurrent enrollment; and (d) a professional license. In addition, AP courses may be used to satisfy the academic core curriculum of the distinguished achievement program. Districts may begin offering the distinguished achievement program in 1995-96, and must implement the program to replace the advanced high school and advanced high school honors programs by 1999-2000.

College and University Policies

Periodically, the College Board conducts comparability studies in each of the AP subject areas to ensure that AP examination grades represent achievement comparable to that of non-AP students taking college courses in corresponding AP examination subjects (CEEB & ETS, 1994). Generally, AP examination grades of 3 to 5 are set to correspond to mean college course grades of C to A. Both the College Board and the American Council on Education (ACE) recommend an AP examination minimum grade of 3 for higher education academic departments to use as a basis for granting course credit (CEEB & ETS, 1994). In addition, the ACE (CEEB & ETS, 1994) has noted an increasing tendency for colleges to grant provisional credit for AP examination grades of 2 because comparability studies indicate that some of these students may be qualified for credit, especially if a subsequent course in the same discipline is completed successfully. The AP grading scale helps outline the College Board's general guidelines for the consistent awarding of college credit or advanced placement across academic departments within colleges and universities.

AP Grading Scale
5 = Extremely well qualified
4 = Well qualified
3 = Qualified
2 = Possibly qualified
1 = No recommendation

Although the above recommendations are followed with some consistency, policies for awarding advanced placement or credit for particular AP examination grades often vary in a number of important ways across colleges and universities and even among departments within universities. Therefore, students seeking credit or advanced placement for AP examination scores should investigate AP policies at the colleges and universities they plan to attend.

In a study of AP policies, 18 AP Consortium institutions in the southwestern region of the country (Koch, Fitzpatrick, Triscari, Mahoney, & Cope, 1988) were surveyed about AP examinations that qualified students for credit, exemption, or placement in specific courses; AP examination grades required; whether the free-response booklet from the AP examination was required along with the AP grade; number of hours credit awarded by AP examination grade; course grade awarded by AP examination grade; and any prerequisites and/or exceptions in the AP policy. Most institutions awarded credit for scores of 4 and 5, somewhat fewer granted credit for scores of 3, and only a few accepted scores of 2 — mainly in foreign language subjects — while requiring institutional prerequisites. At that time, relatively few institutions had researched setting appropriate cut scores for these policies or had studied student performance in subsequent courses in a discipline for which AP credit or advanced placement was received.

Results from a survey of Texas public postsecondary institutions (Brasel, 1993) about AP acceptance policies found consistency in the general rather than in the specific policies for awarding credit by examination, which includes other tests along with the AP. For instance, to receive credit by examination students generally have to be enrolled and in good standing at the institution; petition for the credit; not use the credit to satisfy residency requirements; not petition for credit in a course prerequisite to a course in which a grade was already earned; and earn more credits by class attendance than by examination. In addition, until this year Texas law prohibited students in institutions receiving public funds from earning more than 3 credit hours by examination in U. S. history and in government (TEC §§51.301-51.302).

The College Board's (1995a) *College Explorer* software provides information on more than 2,800 postsecondary institutions obtained from the *Annual Survey of Colleges, 1995-96*, including information on AP and admission policies. Information on AP policies was listed for 35 Texas public colleges and universities.

Student Performance

A comparison of 1993-94 Advanced Placement (AP) examination participation and performance with participation and performance on other statewide tests showed a positive relationship. Districts with high participation rates on 1992-93 college admissions tests also tended to have high participation rates on 1993-94 AP examinations. Districts and campuses with high performance on the 1993-94 TAAS and the 1992-93 SAT/ACT also had high performance on 1993-94 AP examinations.

Districts were grouped into three categories based on the percent of graduates taking the 1992-93 Scholastic Aptitude Test (SAT) and/or American College Testing Program's ACT Assessment. The higher the percent of graduates taking the SAT and/or ACT, the higher the percent of Grade 11-12 students taking 1993-94 AP examinations.

The SAT/ACT criterion is a score of 1000 on the SAT and/or an ACT composite score of 24. In districts with fewer than 10 percent of graduates meeting the SAT/ACT criterion, 53.2 percent of AP examinees had an AP score of 3 or above, compared to 82.5 percent in districts with 35 percent or more of graduates meeting the SAT/ACT criterion. The same pattern was seen in relation to percent of examination scores at 3 or above.

Districts were grouped into five 1993-94 TAAS (Texas Assessment of Academic Skills) categories with percent of students passing ranging from under 47.7 percent to over 68.8 percent. The TAAS testing program, which is a criterion-referenced test emphasizing academic skills rather than minimum skills, is administered to students in Grades 3-8 and 10. Percent of AP examinees with at least one AP score of 3 or above ranged from 60.2 percent for the lowest TAAS passing group to 79.2 percent for the highest TAAS passing group. A similar pattern was seen for percent of examination scores of 3 or above. The pattern is even more pronounced when looking only at campuses offering AP examinations.

Number of Districts		Percent of Students Taking At Least One AP Exam	Percent of AP Examinees Scoring 3 or Above	Percent of AP Exams with Scores of 3 or Above
	1992-93 SAT/ACT: Percent Taking			
292	0% to Under 55%	2.1	62.3	59.6
341	55% to Under 70%	3.9	64.6	61.8
334	70% and Over	7.5	77.3	75.1
4	No Graduates	0.0	0.0	0.0
	1992-93 SAT/ACT: Percent At or Above Criterion			
101	None Met Criterion	0.1	*	*
270	Under 10%	1.7	53.2	47.4
409	10% to Under 20%	3.4	61.2	58.5
159	20% to Under 35%	7.1	76.2	73.5
28	35% and Over	14.6	82.5	80.2
4	No Graduates	0.0	0.0	0.0
	1993-94 TAAS: Percent Passing All Tests Taken			
199	Under 47.7%	2.7	60.2	56.8
202	47.7% to Under 55.3%	3.6	61.1	57.4
198	55.4% to Under 61.5%	4.0	68.3	66.0
194	61.6% to Under 68.8%	4.7	74.0	73.6
178	68.8% and Over	9.1	79.2	76.9
971	State Total	4.6	70.6	68.6

Data Sources: TEA analysis of CEEB 1993-94 Texas public school AP exam data and of TEA PEIMS 1993-94 enrollment data using examinee grade level from PEIMS as available and from AP files otherwise.

* Data masked to protect district anonymity.

Almost half of the 35 institutions offer as much as sophomore standing to students with acceptable scores on AP examinations. Three indicated acceptance of AP examination scores to satisfy admission requirements. Texas public colleges and universities accepted qualifying scores on an average of 23 of the 29 types of AP examinations. For institutions for which acceptable AP score ranges were listed, acceptable scores varied depending on examination subject. On average, Texas public colleges and universities appeared to accept qualifying scores on a greater number of different AP subject examinations than was the case in 1993. AP minimum score requirements at private colleges and universities were generally more consistent across all examinations than was the case with their public counterparts.

Many colleges and universities require or allow examination scores to be used for course placement or for awarding course credit. Types of tests used other than AP may include American College Testing Program tests such as the ACT Assessment and the ACT PEP: Regents College Examinations, College Board tests such as Multiple Assessment Programs and Services (MAPS), Scholastic Assessment Test (SAT I, formerly the Scholastic Aptitude Test, or SAT), College Level Examination Program (CLEP), SAT II: Subject Tests (formerly College Board Achievement Tests); International Baccalaureate Examinations; and locally-developed departmental or divisional tests within the individual institutions (e.g., Brasel, 1993; University of Texas at Austin, 1995).

Texas Advanced Placement Incentive Program

In 1993, the Texas Legislature authorized a program of financial incentives and awards for students, teachers, and school campuses for performance and participation in the AP program of courses and examinations. In the following biennium, statute included similar incentives, awards, and examination fee subsidies for International Baccalaureate (IB) courses and examinations (TEC §§28.051-28.058). The following types of awards and subsidies are included under the Texas Advanced Placement Incentive Program.

For schools—

- a one-time $3,000 equipment award, based on need as determined by the commissioner of education, for providing an AP or IB course and
- $100 for each student scoring 3 or higher on an AP examination or 4 or higher on an IB examination.

For teachers teaching AP or IB courses—

- a subsidy up to $450 for teacher training for an AP or IB course,
- a one-time $250 award for teaching an AP or IB course the first time, and
- a share of the teacher bonus pool proportional to the number of courses taught. The school may deposit $50 for each student scoring 3 or higher on an AP examination or 4 or higher on IB examination in the teacher bonus pool.

For students—

- an examination fee reimbursement of up to $65 may be received for a score of 3 or higher on an AP examination or 4 or higher on an IB examination, and
- with SBOE approval, an examination fee subsidy of up to $25 for each examination taken by students demonstrating financial need according to guidelines adopted by the College Board or the International Baccalaureate Organization.

National AP Reporting

For many years the College Board has prepared summary reports (e.g., CEEB, 1993b, 1994b) of AP examination results for the nation and for individual states. Typically, the national results have provided an implicit benchmark or standard for examining state performance. However, the state versus national AP performance comparisons are most appropriate when AP examination participation rates, educational and demographic characteristics of examinees, and AP policies within states and within secondary and postsecondary institutions are similar. Still, such comparisons, if made with consideration of other potential explanations for performance differences, can help in evaluating educational progress within and among institutions over time.

In recent years, interest in using AP examination results as indicators of educational progress and comparative performance has emerged nationally, as well as within certain regions of the nation. One example is the National Education Goals Panel's (NEGP) (1994a, b) annual reporting of AP examination participation and performance progress as a direct measure of Goal 3, one of the eight National Education Goals adopted by Congress in 1994. Goal 3 calls for the nation's students to demonstrate mastery of challenging content in a broad array of academic subjects by the year 2000. AP measures in the NEGP reports include the number of AP examinations taken per 1,000 11th and 12th graders, which is consistent with College Board reporting, and the number of AP examination scores of 3 or higher per 1,000 11th and 12th graders. These reports compare the most recent year's performance to a prior benchmark year to gauge progress on the measure for the nation and for individual states, which has been improving generally for both Texas and the nation.

Teacher Experience, Salary, and Education

Districts with more experienced teachers, higher average teacher salaries, and more teachers with advanced degrees in 1993-94 tended to show a fairly consistent pattern of higher 1993-94 Advanced Placement (AP) examination participation and performance. Districts were grouped into four categories based on each of these teacher characteristics. In districts with average teacher salaries below $25,434, only 1.4 percent of Grade 11-12 students took at least one AP examination in 1993-94 and just over one-third of those examinees scored 3 or above on at least one examination. By comparison, in districts with average teacher salaries over $28,167, 5.8 percent of students took an AP examination and almost three-fourths of those examinees scored 3 or above on at least one examination. The higher AP participation and performance in districts with higher average teacher salaries may be linked in part to other district characteristics, such as district size, that are also related to teacher salaries. For example, large districts, which have higher AP examination participation and performance, also typically have higher teacher salaries.

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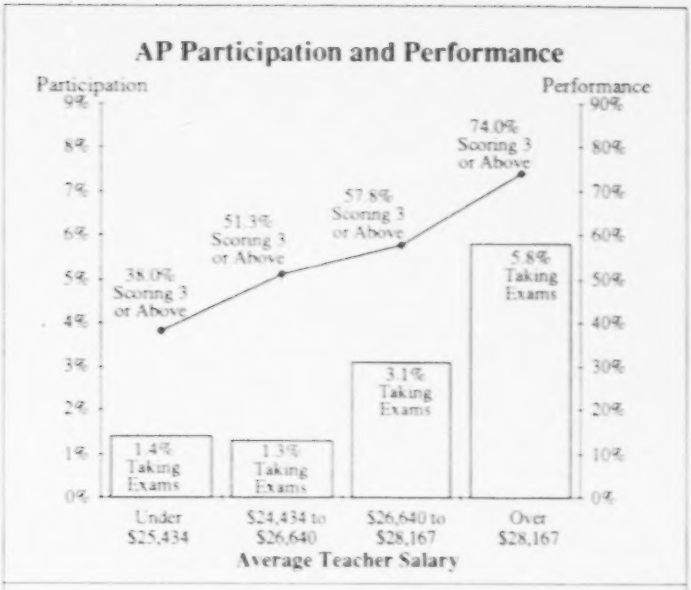

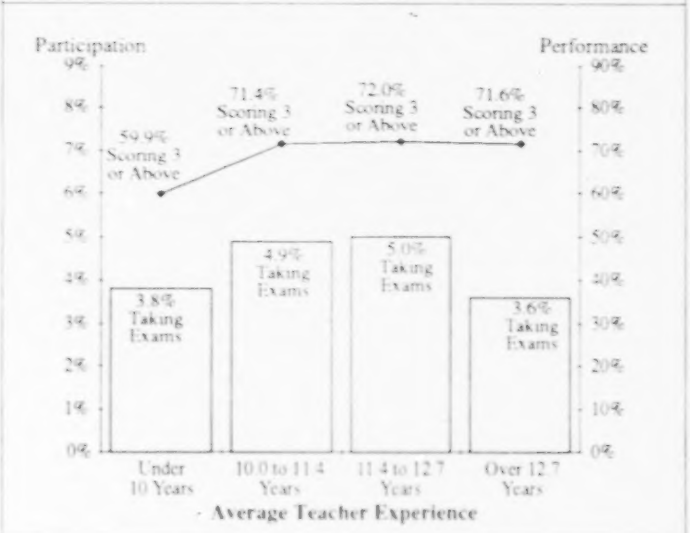

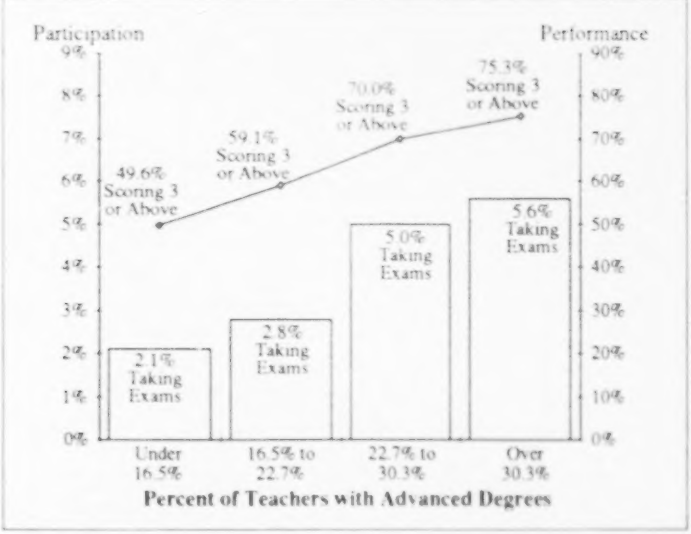

Data Sources: TEA analysis of CEEB 1993-94 Texas public school AP exam data and of TEA PEIMS 1993-94 enrollment data using examinee grade level from PEIMS as available and from AP files otherwise.

For 15 states in the southern region of the nation (Texas, Oklahoma, Arkansas, Louisiana, Mississippi, Tennessee, Kentucky, Alabama, Georgia, Florida, South Carolina, North Carolina, Virginia, West Virginia, and Maryland), the Southern Regional Education Board (SREB) (1995) goals for AP are the following.

- Increase the percentage of high schools offering Advanced Placement courses to at least 60 percent . . .
- Increase the percentage of students taking Advanced Placement examinations to the national average or higher . . .
- Increase the 'passing rate' to at least the national rate (p. 11).

Analysis of 1993-94 AP examination data indicates that Texas (along with three other SREB states) met only the third goal of increasing the passing rate to at least the national rate, while eight of the SREB states met the first goal and six met the second goal.

Methodology

Two levels of decisions must be made regarding reporting of performance data — decisions related to the data source and decisions related to indicator definitions. The data source decisions primarily concern methodological and technical issues related to the source of information to be used. The indicator definition primarily concerns policy decisions such as consideration of the local school district behavior that will be promoted by use of the indicator.

Data Sources

Data files provided by the College Board are the source of AP examination and participation data. Student grade level, ethnicity, and gender, as well as other district, campus, and student demographic information are taken from the Public Education Information Management System (PEIMS) database as available and from the AP data files otherwise. Consistent with other reporting of AP examination data, all AP examinations taken by Texas public school students in a given school year are reported for that year (e.g., CEEB, 1994a, b; NEGP, 1994a, b; SREB, 1995).

Texas and national summary AP examination data for 1992-93, 1993-94, and 1994-95 were extracted from reports published by the College Entrance Examination Board (CEEB, 1993b; 1994a, b; 1995c). In addition, data files of individual student AP examination scores for 1992-93 and 1993-94 were provided to the Texas Education Agency (TEA) by the College Board through the Educational Testing Service (ETS). (The 1994-95 individual student AP data files were not available at the time the analyses for this report were conducted.) The individual student scores were linked with TEA PEIMS individual student records, including course completion records, for the appropriate year. Therefore, analyses based on AP examination data that have been linked with PEIMS data are reported for the 1992-93 and 1993-94 school years only. This includes analysis of AP examination participation and performance by student, campus, and district characteristics, and analysis of AP examination participation in relation to course completions. Data are reported for 1994-95 whenever available, including student course completions for 1994-95, which were available through PEIMS.

Measures technically defined in this report include the number of examinations taken and number of scores above the criterion or standard. These are discussed in relation to campus, district, region, or state enrollment, which for Texas is the fall snapshot enrollment as of the last Friday in October. This is consistent with other reporting using enrollment with AP examination data. Although the AP examinations are not administered until May, most examinees are included in the fall enrollment. This suggests that currently there is low mobility among AP examinees, a trend that should be monitored as participation increases. Fall enrollment is also the base against which the advanced course enrollment indicator adopted by the SBOE (of which AP courses are a part) is reported. This report highlights the combined performance of 11th and 12th graders, who make up 95 percent of the 1993-94 Texas AP examinees. Again, this is consistent with other reporting or AP examination data.

Therefore, the AP examination participation and performance data presented in this report are for Grade 11-12 students enrolled in a given school year, on AP examinations taken that school year, disaggregated by demographic information as reported through PEIMS.

Indicator Definitions

The primary AP indicators to be defined from a state-level policy perspective concern AP examination participation and performance. For examinations such as the AP, SAT, and ACT, which are taken on an optional basis and especially encouraged for students interested in attending college, proper reporting of examination results requires some summary of the degree to which all students participate in or have access to the testing. In addition, a performance measure should not be easily subject to distortion. For example, higher state, district, or campus average scores or score percentages can be obtained more easily when only a small, select group of better prepared students is tested. If higher performance alone becomes an important goal, schools might choose to discourage AP participation by all but the best prepared students, which would artificially increase the performance rate. However, educational opportunities, which AP examinations

indirectly measure, are limited for some students by such a practice. Examination score results reported without concomitant results on testing participation are subject to misinterpretation for the same reason.

The main issue for reporting *AP participation* is the numerical unit that will be used in making this comparison. Because the numbers of AP examinees and enrollees at state and national levels are generally large, reporting number of examinees per 1,000 Grade 11-12 enrollees provides a realistic base for comparison. For districts and campuses, however, using per 1,000 enrollees as the comparison basis is much less meaningful, given enrollment for most Texas school districts and high schools is less than 1,000. The option is to report examinees as a percentage of enrollment. In most reporting at the district and campus levels, percentages are reported with one decimal position (one-tenth of a percent). At some campuses and districts, participation percentages round to zero when a small number of students out of several hundred enrolled take AP examinations. In these instances, a reporting note can be used to indicate that the percentage is non-zero.

The measure of AP examination participation presented in this report is percent of Grade 11-12 enrolled students taking at least one AP examination, with percents reported with one decimal position. This is consistent with reporting of SAT/ACT participation by TEA. Also, a percentage reported with one decimal position can be easily converted to a number per 1,000. A 4.6 percent participation rate, for example, converts to 46 examinees per 1,000 students.

Somewhat less consistency exists between College Board and other reporting of *AP examination performance* than with reporting of participation. For example, NEGP (1994a, b) reports performance in terms of the number of AP examinees with scores of 3 to 5 per 1,000 11th and 12th graders, while the College Board (1994a, b) and SREB (1995) focus on the percentage of 3 to 5 examination scores. The main considerations for selecting appropriate *AP examination performance* indicators are

- using the appropriate scores in setting performance criteria;
- linking score criteria to either examinations, examinees, or both;
- using either examinations taken or enrolled students as a basis for comparison; and
- reporting the appropriate numerical unit — either rate per 1,000 or a percentage.

Performance criterion. As noted earlier, 3 is the minimum AP examination score recommended by ACE for higher education course credit, although a few colleges and universities grant credit in some courses for scores of 2 (CEEB & ETS, 1994). In addition, state statute and SBOE rules for the Texas Advanced Placement Incentive Program tie some student, teacher, and school incentives to AP examination scores of 3 or above. For these reasons and for maintaining consistency with most AP examination score reporting, using a minimum AP score of 3 appears to be the most appropriate score criterion to use in defining AP performance indicators.

Linking to examinations or examinees. Regarding the question of whether the minimum AP score criterion should be referenced to the total number of examinations or the total number of examinees, compelling arguments can be made for both. On the one hand, regardless of the number of examinations taken per examinee, performance across all examinations taken (the number of examination scores that are 3 or above) is of interest for an indicator because, conceivably, performance may be better or worse depending on the number and type of examinations taken by individual examinees. On the other hand, performance across examinees has merit, especially if some examinees are unable to score 3 or above on any examination taken, and other examinees score 3 to 5 on every examination taken. A viable second, complementary indicator becomes one that uses the number of examinees with at least one AP examination score that is 3 or above.

Basis for comparison. Since only a small percentage of students are taking AP examinations, a case can be made for using total examinations taken rather than students enrolled as the extent to which AP criterion scores were obtained. Using total examinations as the reporting basis is consistent with College Board and SREB reporting. Also, if the number of students enrolled is used as a basis for criterion score reporting, actual rates of criterion score attainment are then severely and somewhat artificially lowered by including non-AP students in the definition of the measure.

Reporting unit. The question about defining AP examination performance indicators as percentages or as rates per 1,000 11th and 12th graders can be considered from the perspective of consistency with College Board and TEA reporting. Academic Excellence Indicator System (AEIS) reports, the primary vehicle for reporting performance indicators for Texas public schools and districts, present all performance measures as percentages rather than rates per 1,000 students, and this format is followed in other performance data reporting by TEA. From that perspective, the appropriate reporting unit is a percentage rather than a rate. The argument raised regarding reporting participation at the district and campus levels also applies here — most Texas high school campuses and school districts have fewer than 1,000 students. For reporting percentages at the district

Student Course Work

Correspondences among Texas Grade 9-12 public school Advanced Placement (AP) examinees, AP examinations taken, AP courses completed, and advanced courses completed were explored. Advanced courses included AP courses as well as courses not designated as AP. Non-AP advanced courses are courses such as mathematics courses above the level of Algebra I; science courses such as Biology II, Chemistry II, and Physics II; Creative/Imaginative Writing and Humanities; Debate III; Advanced Social Science Problems; and advanced language courses.

AP Examinee and Advanced Course Completer Correspondence: 1992-93 and 1993-94 Texas Public Schools (Grades 9-12)

Examinees	1992-93		1993-94	
	Number	Percent of Group	Number	Percent of Group
AP Courses				
No Courses	9,334	66.3	8,570	51.7
At Least 1 Course	4,747	33.7	8,014	48.3
Advanced Courses				
No Courses	2,068	14.7	2,071	12.5
At Least 1 Course	12,013	85.3	14,513	87.5

Advanced Course Completers and AP Examinee Correspondence: 1992-93 and 1993-94 Texas Public Schools (Grades 9-12)

Course Completers	1992-93		1993-94	
	Number	Percent of Group	Number	Percent of Group
AP Course Completers				
No Exams	6,655	58.4	13,491	62.7
At Least 1 Exam	4,747	41.6	8,014	37.3
Advanced Course Completers				
No Exams	86,528	87.8	92,213	86.4
At Least 1 Exam	12,013	12.2	14,513	13.6

Data Sources: TEA analysis of CEEB 1992-93 and 1993-94 Texas AP public school examination data and TEA PEIMS course completion data, using only last semester completion of courses as the basis for numerical counts.

From 1992-93 to 1993-94, the percent of AP examinees completing at least one AP course rose from 33.7 to 48.3 percent. At the same time, the percent of AP examinees completing at least one advanced course went from 85.3 to 87.5 percent. This indicates that a high percentage of examinees overall completed courses considered to be more rigorous generally in preparation for the examinations. The increase in the number of examinees with AP course completions was consistent with the increase in the number of schools offering AP courses between 1992-93 and 1993-94.

Correspondences in the opposite direction were also examined — AP and advanced course completers who took AP examinations. Although the percentage of AP course completers taking at least one AP examination dropped from 41.6 percent in 1992-93 to 37.3 percent in 1993-94, the percent of advanced course completers taking AP examinations rose from 12.2 to 13.6 percent over the same period. Considering that the number of students completing at least one AP course almost doubled from 1992-93 to 1993-94, the drop in the percentage of AP course completers taking examinations is not necessarily alarming, especially given the number of schools reporting AP course completions for the first time in 1993-94. However, most students completing advanced courses did not take AP examinations (86.4% in 1993-94), as expected, but over one-third of AP course takers took AP examinations.

Further analysis provided information on the extent to which students taking AP examinations completed the corresponding AP courses. In 1993-94, 39.2 percent of AP examinations were taken by students who completed the corresponding AP course. For example, students taking the AP Biology Examination had completed the AP Gen-

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and AP Examinations

eral Biology course taught in Texas public schools. This represented an increase from 27.2 percent in 1992-93.

For 31.8 percent of the AP course completions in 1993-94, students took the corresponding AP examination. The 22,356 students who completed an AP course without taking the corresponding examination included students who did not take any AP examinations as well as students who took an examination in an area other than the AP course completed. Many students take more than one AP course (the average was 1.5 courses per student in 1993-94) and may not take AP examinations corresponding to all courses completed. These findings were consistent with the pattern for students completing any AP course and at least one AP examination.

Although most AP examinations were taken without the student having completed the corresponding AP course, those students who did complete the corresponding course performed better on the examinations. In 1993-94, higher percentages of examinations taken by students who had completed the corresponding AP course received scores of 3 or above than examinations taken without the corresponding AP course. In 1992-93 this was true for scores of 4 and 5. The higher scores were also reflected in higher mean scores for students who completed the AP course corresponding to the examination.

Correspondence Between Specific AP Exams and AP Courses Completed: 1992-93 and 1993-94 Texas Public Schools (Grades 9-12)

Examinees and Course Completers	1992-93		1993-94	
	Number	Percent of Group	Number	Percent of Group
Exams Taken Without Corresponding AP Course	15,992	72.8	16,135	60.8
Exams Taken With Corresponding AP Course	5,981	27.2	10,410	39.2
AP Courses Completed Without Corresponding Exam	11,184	65.2	22,356	68.2
AP Courses Completed With Corresponding Exam	5,981	34.8	10,410	31.8

Note: AP examinations were linked to corresponding AP courses by student to obtain the statistics above.

Correspondence Between AP Exam Scores and AP Courses Completed: 1992-93 and 1993-94 Texas Public Schools (Grades 9-12)

AP Exam Score	1992-93				1993-94			
	Exams Taken Without AP Course		Exams Taken With AP Course		Exams Taken Without AP Course		Exams Taken With AP Course	
	Number	Percent of Group	Number	Percent of Group	Number	Percent of Group	Number	Percent of Group
1	1,672	10.5	447	7.5	1,401	8.7	751	7.2
2	3,967	24.8	1,227	20.5	3,973	24.6	2,178	20.9
3	4,947	31.0	1,808	30.2	5,106	31.7	3,380	32.5
4	3,206	20.1	1,414	23.6	3,272	20.3	2,372	22.8
5	2,186	13.7	1,083	18.1	2,366	14.7	1,725	16.6
Mean Score	3.02		3.24		3.08		3.21	

Note: AP examinations were linked to corresponding AP courses by student to obtain the statistics above. In a small number of instances, scores were not available for exams that were taken and, thus, are not included in the statistics above.

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and campus level, appropriate reporting should indicate "not applicable" on examination and examinee performance indicators for campuses or districts with no AP examination participation, and 0.0 percent for those districts or campuses that par-ticipate in the AP program but have no scores or examinees with scores of 3 or above.

This report presents data for two complementary indicators of *AP performance* as best incorporating the issues related to the four main considerations discussed above. AP examination performance is reported as percent of Grade 11-12 AP examination scores at 3 or above. AP examinee performance is reported as percent of Grade 11-12 examinees with at least one AP score at 3 or above. Both percentages are reported with one decimal position.

Because AP examinations are developed to test the breadth and depth of student knowledge gained from college level courses in various content areas, AP courses are designed to offer the requisite preparation. The degree to which students within schools and districts perform well on the AP examinations can depend on the extent to which these students have the opportunity to enroll in AP courses that correspond to the examination subjects. Undoubtedly, students with access to only one or two AP courses are less likely to achieve advanced placement or credit for college sophomore standing via the AP examination route. For these reasons, the number of AP courses and examinations to which students have access is of interest even though it is not a direct indicator of campus or district performance. Information related to the number of AP courses and examinations offered can also be helpful in interpreting indicator data and can encourage schools and districts to offer students a wide variety of AP courses and examinations.

The following data related to courses and examinations offered are presented in this report: AP courses completed (number of types of AP courses completed) and AP examina-

Table 2
1990-91 to 1994-95 AP Exam Trends: Texas versus U.S.
(Public Schools)

	1990-91		1991-92		1992-93		1993-94		1994-95	
	Texas	U.S.	Texas	U.S.	Texas	U.S.	Texas	U.S.	Texas	U.S.
Number of Schools	353	7,378	376	7,754	426	8,095	454	8,265	577	8,599
Number of Examinees	12,102	281,628	13,343	307,073	15,892	338,889	18,540	368,780	24,593	407,030
Number of Exams	18,237	415,336	20,384	453,524	24,753	505,194	29,551	558,330	40,346	628,393
Number of Scores 3-5	12,042	261,160	14,037	290,939	16,583	317,857	20,318	361,125	24,298	380,365
Percent of Scores 3-5	66.0%	62.9%	68.9%	64.2%	67.0%	62.9%	68.8%	64.7%	60.2%	60.5%

Data Sources: CEEB (1995c); CEEB (1994b) and personal communication with P. Williamson, College Board, Southwestern Regional Office, October 13, 1995, for number of schools data.

Since 1990-91, AP program participation in public schools has shown consistent growth, increasing by 64 percent in Texas and 17 percent nationally. During the same period, the number of examinees and examinations taken more than doubled in Texas, while the national increase for examinees and examinations was about half the Texas rate. In 1994-95, the national percentage of 3-5 examination scores slightly exceeded the Texas percentage for the first time in the five year period.

Table 3
1990-91 to 1994-95 AP Exam Trends: Texas versus U.S.
(All Schools)

	1990-91		1991-92		1992-93		1993-94		1994-95	
	Texas	U.S.	Texas	U.S.	Texas	U.S.	Texas	U.S.	Texas	U.S.
Number of Schools	413	9,781	451	10,191	502	10,594	544	10,863	649	11,274
Number of Examinees	14,101	358,679	15,364	388,142	18,139	424,192	21,178	458,945	27,770	493,263
Number of Exams	21,529	534,316	23,672	580,143	28,437	639,385	33,944	701,108	45,733	767,881

Data Source: CEEB (1995c).

AP participation in Texas and nationally for all schools (public and private) shows a similar pattern to that for public schools.

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tions taken (number of types of AP examinations taken). AP courses completed includes all AP courses completed by students, whether or not those courses are offered on their home campuses. Although smaller districts and schools may be more limited in the number of AP courses they can offer, students can gain access to a wider variety of courses through cooperative arrangements and distance learning. This measure puts small districts and campuses at less of a disadvantage than reporting of courses offered, which includes only courses offered on the campus. The maximum number of AP courses and examinations currently available is 29.

AP Examination and Course Data

State and National Trends

Over the past few years, the number of schools and students participating in the AP program has increased both in Texas and nationally, but to a relatively greater extent in Texas (CEEB, 1995). As shown in Table 2, the total number of public school students taking at least one AP examination doubled in Texas from 12,102 in 1990-91 to 24,593 in 1994-95. The number of examinees nationally rose from 281,628 to 407,030. In addition, the number of AP examinations more than doubled in Texas from 18,237 in 1990-91 to 40,346 in 1994-95. The number of examinations taken nationally increased by over 50 percent; U.S. examinees took 415,336 examinations in 1990-91 and 628,393 in 1994-95. Thus, in 1994-95 Texas was averaging 1.6 examinations per examinee versus 1.5 examinations per examinee nationally. Table 3 shows a similar pattern of participation in Texas and nationally for all schools (public and private).

Table 2 also shows the number and percentage of AP examination scores of 3 to 5. In Texas public schools, the number of scores of 3 or better doubled between 1990-91 and 1994-95, although they decreased as a percentage of all scores. Nationally, scores of 3 or better also declined as a percentage of all scores. In 1994-95, 60.2 percent of Texas AP examination scores were 3 or better, compared to 60.5 percent nationally. Considering the large increases in the total number of examinees and examinations from 1990-91 to 1994-95, the decline in overall AP examination scores is not surprising, especially if the decline is associated with schools participating in the AP program for the first time. The number of Texas public schools with AP examinees jumped to 577 in 1994-95 — up by 224 schools since 1990-91. The largest increase was in 1994-95, with 123 additional schools offering AP examinations. The number of public schools offering AP examinations also increased nationally from 1990-91 to 1994-95.

AP Examinations by Subject

A richer understanding of Texas and national AP examination volume and performance can be obtained from studying examination data by subject. Table 4 on page 14 summarizes 1993-94 examination data by subject. The English Language and Composition and the English Literature and Composition examinations each accounted for 18.0 percent of total Texas examinations in 1993-94. The English Literature and Composition and U.S. History examinations were the most popular nationally. The statutory limitation on college credit hours by examination that could be awarded for U.S. History until this year in Texas may account for the lower interest in that AP examination. Calculus AB was the third most popular examination in Texas and nationally. Texas mean scores were higher than those for the U.S. for 18 of the 29 AP examinations in 1993-94. Of those examinations taken by more than 500 Texas students, Texas mean scores exceeded national scores by the greatest amount on the Computer Science A and Economics-Macroeconomics examinations. Economics-Microeconomics was the only examination taken by more than 500 Texas students on which national scores exceeded Texas scores.

Examinees by Grade Level, Gender, and Ethnicity

In 1993-94, almost all AP examinees (96.5% in Texas and 92.3% nationally) were enrolled in Grades 11-12, as shown in Table 5 on page 15. Both in Texas and nationally there was a slight increase between 1992-93 and 1993-94 in 9th-11th grade students taking the examinations, as a percent of all examinees.

The percentage of male and female examinees remained about the same for Texas in 1993-94 as in 1992-93 (54.5% female versus 45.5% male). Nationally, the percentage of females increased 1.1 percent. Although females made up 9.0 percent more of examinees than males in Texas in 1993-94, they accounted for only 2.0 percent more of the examinations taken. Approximately 69.0 percent of Texas examinees were White, compared to 66.8 percent nationally. Hispanic students made up 15.3 percent of Texas examinees in 1993-94; this was the only ethnic group that increased as a percent of all examinees. African American students made up only 2.9 percent of AP examinees and other minorities comprised the remaining 12.3 percent.

Figure 1 on page 17 shows 1993-94 AP examination scores by gender for Texas public schools. Overall there is little difference between male and female scores. Males obtained slightly higher percentages of scores from 3 to 5 than females (69.8% for males versus 67.5% for females). However, the 1993-94 gap between female and male 3-5 examination score percentages in Texas narrowed, resulting from gains in Texas female

scores from 1992-93, and was smaller than the gap nationally in 1993-94.

Percentages of examinations with scores of 3 and above went up for almost every ethnic group in 1993-94 compared to 1992-93 in Texas and nationally, as shown on Table 6 on page 18. In Texas, scores of 3 and above were posted most often by Asian Americans, followed by Whites, and American Indians. Texas scores were higher than national scores for all ethnic groups except Hispanics and other ethnicities. However, in 1993-94 Texas Hispanics made up 15.3 percent of AP examinees compared to 7.5 percent of examinees nationally.

Table 4
1993-94 AP Exam Score Statistics by Subject: Texas versus U.S. Public Schools

Exam	Number of Exams		Percent of Total Exams		Percent of Exam Scores 3-5		Mean Score	
	Texas	U.S.	Texas	U.S.	Texas	U.S.	Texas	U.S.
English Language and Composition	5,309	35,260	18.0	6.3	65.5	60.9	3.0	2.9
English Literature and Composition	5,299	104,692	18.0	18.8	74.3	69.5	3.2	3.1
Mathematics - Calculus AB	3,288	74,241	11.2	13.3	69.4	65.3	3.1	3.0
History - United States	3,252	101,635	11.0	18.2	55.3	52.3	2.8	2.8
Government and Politics: United States	1,835	25,988	6.2	4.7	69.5	67.5	3.0	3.0
Spanish Language	1,674	26,412	5.7	4.7	85.7	80.7	3.8	3.7
Biology	1,614	42,120	5.5	7.5	66.2	63.9	3.2	3.1
Chemistry	1,095	25,988	3.7	4.7	64.4	60.2	3.0	2.9
Economics - Macroeconomics	1,078	7,712	3.7	1.4	74.2	68.1	3.3	3.1
Mathematics - Calculus BC	840	13,619	2.9	2.4	84.8	82.5	3.8	3.7
Economics - Microeconomics	659	6,365	2.2	1.1	57.1	70.6	2.7	3.1
Computer Science A	501	5,266	1.7	0.9	62.3	48.8	3.0	2.5
History - European	439	25,205	1.5	4.5	73.6	71.9	3.1	3.1
Physics C - Mechanics	348	7,231	1.2	1.3	78.7	71.4	3.5	3.3
Psychology	303	7,153	1.0	1.3	71.9	69.3	3.1	3.2
Physics B	297	12,198	1.0	2.2	56.2	58.7	2.7	2.7
French Language	249	7,708	0.8	1.4	55.0	57.3	2.7	2.8
Physics C - Electricity and Magnetism	238	3,652	0.8	0.7	61.3	64.3	3.1	3.2
Studio Art - General Portfolio	226	3,707	0.8	0.7	78.8	77.3	3.4	3.3
Computer Science AB	225	3,403	0.8	0.6	65.8	67.9	3.3	3.2
Government and Politics - Comparative	135	4,381	0.5	0.8	40.7	61.5	2.3	2.9
Studio Art - Drawing Portfolio	116	1,791	0.4	0.3	84.5	71.4	3.7	3.2
History of Art	101	3,423	0.3	0.6	77.2	74.0	3.3	3.2
Spanish Literature	92	3,024	0.3	0.5	84.8	82.3	3.4	3.3
German Language	83	1,986	0.3	0.4	55.4	66.8	2.9	3.2
Latin - Vergil	79	1,260	0.3	0.2	68.4	55.2	3.0	2.7
Music Theory	41	1,680	0.1	0.3	68.3	66.8	3.3	3.1
Latin Literature	25	641	0.1	0.1	48.0	58.8	2.4	2.8
French Literature	10	589	0.0	0.1	90.0	60.3	3.3	3.0

Data Sources: TEA analysis of CEEB 1992-93 and 1993-94 Texas public school AP exam data; and CEEB (1993b, 1994b) for U.S. public school exam data.

In 1993-94, the most popular AP examinations for Texas and the nation were English Language and Composition, English Literature and Composition, Mathematics-Calculus AB, and History-U.S. Texas mean scores by subject were higher than those for the U.S. for 18 of the 29 AP examinations.

District- and Campus-Level Trends

A breakdown of AP examination participation and performance by district and campus characteristics further delineates statewide trends and differences among various types of districts and school campuses. Table 7 on page 19 shows that the percentage of Grade 11-12 students taking at least one AP examination improved from 4.0 to 4.6 percent statewide from 1992-93 to 1993-94. The percentage of examinees with at least one score at 3 or above and the percentage of AP examination scores at 3 or above are relevant because these scores may qualify examinees for advanced standing or college course credit once enrolled in a college or university. From 1992-93 to 1993-94, statewide scores at 3 or above rose from 68.6 to 70.6 percent for examinees and from 67.0 to 68.6 percent for examinations taken.

The percentage of students taking at least one AP examination and the percentage of scores at 3 or above may indicate, to some extent, the degree of student access to more advanced courses. As Figure 2 on page 20 shows, larger districts, between 25,000 and 50,000 students, had the greatest AP examination participation in 1993-94. This is probably due in part to the ability of these districts to offer a wider selection of courses at the high school level, especially courses not required for graduation. The same pattern is also seen at the campus level, with higher participation in the largest campuses.

Districts with higher percentages of students taking 1992-93 and 1993-94 AP examinations also tended to be situated in major suburban or other central city locations and be located in four major urban regions of the state. (Additional information on AP participation and performance by region can be found on page 16.) Both districts and campuses with higher AP partici-

Table 5
1993-94 Examinees by Grade Level, Gender, and Ethnicity: Texas versus U.S. Public Schools

Examinee Groups	Number of Examinees		Percent of Examinee Group		Difference in Percent of Examinee Group, from 1992-93	
	Texas	U.S.	Texas	U.S.	Texas	U.S.
9th/10th	577	22,630	3.1	6.1	0.3	0.4
11th	7,574	136,642	41.0	37.1	2.1	0.8
12th	10,232	203,921	55.4	55.3	–2.6	–1.3
11th/12th	17,806	340,563	96.5	92.3	–0.5	–0.5
Female	10,050	203,385	54.5	55.2	0.3	1.1
Male	8,403	165,395	45.5	44.8	–0.3	–1.1
American Indian	43	1,828	0.2	0.5	0.0	0.0
African American	538	17,347	2.9	4.7	–0.2	0.2
Hispanic	2,815	27,678	15.3	7.5	1.3	0.3
Asian American	2,187	43,193	11.9	11.7	–0.4	–0.4
White	12,736	246,437	69.0	66.8	–0.6	–0.9
Other Ethnicity	30	7,145	0.2	1.9	0.0	0.2
Totals	18,453	368,780				

Data Sources: TEA analysis of CEEB 1992-93 and 1993-94 Texas public school AP examinee data, using examinee grade level, gender, and ethnicity from TEA PEIMS as available and from AP files otherwise; and CEEB (1993b and 1994b) for U.S. public school examinees.

In 1993-94, 11th and 12th graders accounted for most of the AP examinees—about 97 percent in Texas and 92 percent nationally. Females were about 55 percent of both Texas and U.S. examinees. Hispanics accounted for about 15 percent of Texas examinees, compared to about 8 percent nationally, while about 3 percent of Texas examinees were African American compared to about 5 percent nationally.

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Education Service Center Regions

The state is divided into 20 regions, each of which is served by an Education Service Center. The highest 1993-94 Advanced Placement (AP) examination participation (percent of Grade 11-12 students taking at least one examination) tended to be in four major urban regions of the state — Austin, Fort Worth, Houston, and Richardson/ Dallas. Austin, Fort Worth, Houston, and Richardson/ Dallas were also among the regions with the highest percent of AP examinees scoring 3 or above on at least one examination. The Beaumont, Huntsville, Lubbock, and San Antonio regions also had over 70 percent of students scoring 3 or above.

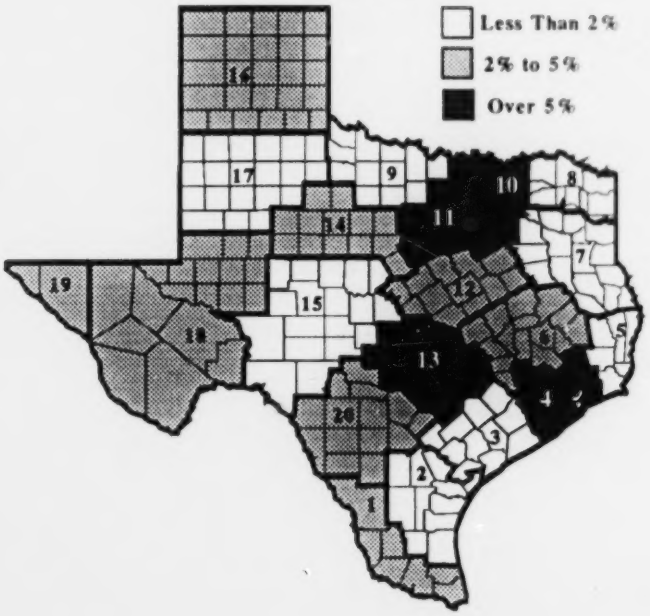
Statewide AP examination participation increased by 0.6 percent from 4.0 percent in 1992-93 to 4.6 percent in 1993-94. The greatest increase was in the Huntsville region, where participation grew from 3.0 percent in 1992-93 to 4.9 percent in 1993-94; the percent of students with scores of 3 or above also increased from 1992-93 to 1993-94. Both the number and percent of Grade 11-12 students taking AP examinations declined between 1992-93 and 1993-94 in the west Texas regions of Abilene, Amarillo, and San Angelo.

AP Participation and Performance

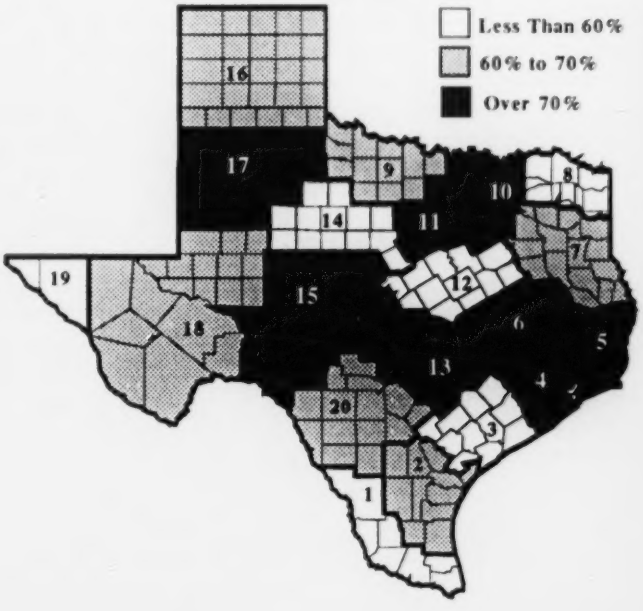
Number of Districts	ESC Region	Percent of Students Taking at Least One Exam	Percent of Examinees Scoring 3 or Above
36	1 Edinburg	2.1	57.4
34	2 Corpus Christi	1.7	61.7
33	3 Victoria	1.8	52.1
52	4 Houston	5.9	76.7
29	5 Beaumont	1.7	74.9
54	6 Huntsville	4.9	70.6
94	7 Kilgore	1.6	64.1
40	8 Mt. Pleasant	1.5	58.8
38	9 Wichita Falls	1.9	61.2
75	10 Richardson	7.0	73.7
69	11 Fort Worth	5.9	70.2
72	12 Waco	3.7	54.4
53	13 Austin	8.3	73.4
43	14 Abilene	3.6	56.9
40	15 San Angelo	1.9	70.3
58	16 Amarillo	2.4	64.4
60	17 Lubbock	1.7	70.7
31	18 Midland	3.4	60.3
12	19 El Paso	3.2	55.4
48	20 San Antonio	4.8	67.9
971	**State Total**	4.6	70.6

Data Sources: TEA analysis of CEEB 1993-94 Texas public school AP exam data; and TEA PEIMS 1993-94 enrollment data using examinee grade level from PEIMS as available and from AP files otherwise.

Participation: Percent of Students Taking at Least One Exam



Performance: Percent of Examinees Scoring 3 or Above



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pation and performance tended to have fewer economically disadvantaged students. Districts with higher than average teacher salaries and higher percentages of teachers with advanced degrees tended to have higher AP participation and performance; districts with higher average teacher experience also tended to have higher AP performance up to 12.7 average years of experience. (The table on page 7 presents more detailed information on district teacher characteristics.)

Districts with high percentages of students passing the Texas Assessment of Academic Skills (TAAS) test and achieving high SAT or ACT scores also tended to have high AP performance. This suggests that AP examination performance may be linked to some of the same factors that are associated with higher performance on other tests. For example, SAT and ACT performance have been linked to number of academic courses completed and percent enrollment in advanced academic courses (TEA, 1995f). (The table on page 5 provides additional information on test participation and performance.)

AP and non-AP Course Trends

As noted earlier, the College Board encourages schools with AP examinees to offer AP courses in corresponding subject areas. However, circumstances such as resource constraints or too few students may mitigate against AP courses being offered at some high schools. On the other hand, non-AP advanced courses or other types of courses may prepare some students sufficiently to perform well on the AP examinations. In any event, not all AP examinees are taking AP courses, and vice versa.

As Figure 3 on page 21 shows, the number of Texas public schools participating in the AP program by offering either courses or examinations increased substantially from 1992-93 to 1994-95. In 1992-93, 158 schools reported students completing AP courses; by 1994-95, the total was 390 schools. This compares to 426 schools with AP examinees in 1992-93, increasing to 577 schools in 1994-95. Almost one-fourth of Texas public schools serving Grades 9-12 offered AP courses in 1994-95, and over one-third had AP examinees. However, only 135 schools had students taking both AP examinations and courses in 1992-93. This increased to 215 schools in 1993-94. Thus, a relatively large number of schools appear to have students taking AP examinations without AP courses (288 schools in 1992-93 and 241 in 1993-94); a much smaller number of schools had students completing AP courses but not taking the AP examinations (23 schools in 1992-93 and 47 in 1993-94).

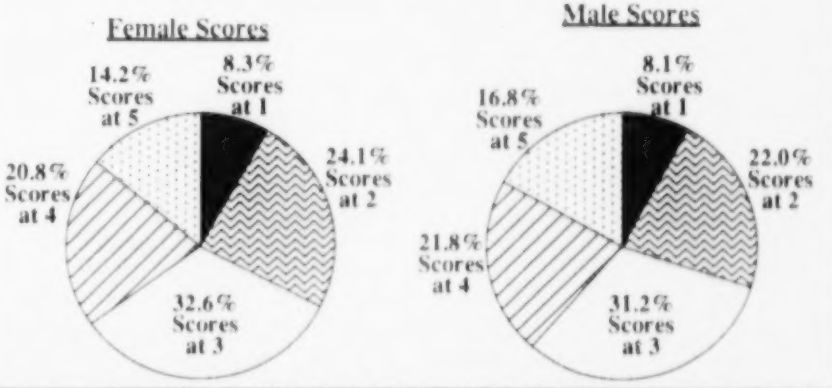
Table 8 on page 22 shows the extent to which Texas public schools have students completing AP courses from school years 1992-93 through 1994-95. Although the number of students with AP and non-AP advanced course completions has grown steadily over the past three years, AP courses relative to non-AP courses accounted for the largest portion of the increase. The number of students completing at least one AP course almost tripled from 1992-93 to 1994-95, while students completing advanced courses increased by 19.5 percent. Students were also enrolling in more AP courses per student. In 1994-95, students completing AP courses completed approximately 1.6 courses, compared to 1.5 in 1992-93. This is consistent with earlier findings that from 1988-89 to 1992-93, growth in course enrollment overall exceeded growth in number of students in Texas public schools (TEA, 1994b). (Further analysis of advanced courses and AP examination participation and performance is presented on pages 10 and 11.)

AP Indicator Reporting

State Statute and SBOE Rule

Texas public school districts are required to prepare and distribute an annual performance report to the public. TEA must provide districts

Figure 1
AP Exam Scores By Gender:
Texas Public Schools (51% Female, 49% Male)



Data Sources: TEA analysis of CEEB 1993-94 Texas public school AP examination data using examinee gender from TEA PEIMS as available and from AP files otherwise.

In 1993-94, 51 percent of Texas AP examinations were taken by females, while males took 49 percent. Of examinations taken by males, 70 percent of examination scores were 3 to 5, compared to 68 percent for females. Eight percent of examinations taken by both males and females showed resulting scores of 1.

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with performance information on all performance indicators, as well as descriptive information about the district for inclusion in the annual performance report (TEC §39.053(a)). Performance on the indicators must be compared to state standards (which are set by the commissioner of education (TEC §39.051(c)) and to prior year performance, disaggregated by gender, ethnicity, and socioeconomic status (TEC §39.051(b)). The agency provides this information through the district and campus Academic Excellence Indicator System (AEIS) reports issued each year. The AEIS reports present performance on all indicators as well as profile (descriptive) data items. Profile items are student, staff, and financial information that provide context for interpreting the performance results (TEA, 1995a). The AEIS reports are the primary vehicle for reporting performance indicators to districts and campuses.

The SBOE has statutory authority to adopt performance indicators for Texas public schools (TEC §39.051(a)). In addition to eight indicators specified in law to be used to either accredit districts or report as part of the AEIS system, the SBOE may adopt other indicators to be reported on the AEIS reports (TEC §39.051 (b)(9)). The statutory indicators used for accreditation and reporting and other indicators adopted by the SBOE for reporting through the AEIS become part of an integrated accountability system. The system integrates district accreditation status, campus ratings, district and campus recognition for high performance, and campus, district, and state-level reports (TEA, 1995a).

Each year TEA determines the accreditation status of school districts, based on state law and standards set by the commissioner of education (TEC §39.073). State law designates those performance indicators that must be considered in the rating of a district, and other criteria that may be considered (TEC §§39.072-39.073). The commissioner of education determines the frequency of on-site accreditation investigations based on an analysis of all performance indicators, including the indicators adopted by the SBOE (TEC §39.074).

The commissioner is also responsible for preparing a school report card that each school must provide to every student's family (TEC §39.052(c)). From a set of indicators specified in law, the commissioner identifies student performance indicators that will appear on the school report card (TEC §39.052(b)).

The first indicator adopted by the SBOE was *percent of students completing advanced academic courses*, adopted in June 1994 (SBOE, 1994). The advanced academic courses indicator was first reported on the 1993-94 AEIS reports. (Percent of students enrolled in advanced courses was previously reported on the AEIS reports.) AP indicators, if adopted by the SBOE, could first be reported in the 1995-96 AEIS reports, released in the fall of 1996. Performance indicators and associated profile data are reported for the current and prior school years. Therefore, 1995-96 and 1994-95 AP examination participation and performance would be reported in

Table 6
1993-94 AP Exam Participation and Scores by Ethnicity; Texas versus U.S. Public Schools (All Grade Levels)

Examinee Group	Number of Exams		Percent of Scores at 2		Percent of Scores at 3-5		Difference from 1992-93 in Percent Scores 3-5	
	Texas	U.S.	Texas	U.S.	Texas	U.S.	Texas	U.S.
American Indian	85	2,528	20.0	32.3	67.1	49.5	1.4	1.0
African American	776	23,722	33.2	35.3	48.3	33.9	6.5	2.2
Hispanic	3,814	37,961	26.0	22.4	56.5	63.3	1.0	1.8
Asian American	4,130	75,351	17.4	21.2	75.7	69.2	1.7	2.4
White	20,462	368,709	23.3	25.1	70.2	65.4	1.8	1.7
Other Ethnicity	42	11,332	26.2	23.5	61.9	65.6	–11.2	2.7
Totals	29,476	558,330						

Data Sources: TEA analysis of CEEB 1992-93 and 1993-94 Texas public school AP exam data, using examinee ethnicity from TEA PEIMS as available and from AP files otherwise; and CEEB (1993b, 1994b) for U.S. public school exam data.

In 1993-94, Texas AP scores were higher than national scores for all ethnic groups, except for Hispanics. Of all Texas and U.S. ethnic groups, Texas African Americans showed the largest gain in percentages of 3 to 5 examination scores between 1992-93 and 1993-94.

Table 7
Texas AP Exam Participation and Scores: 1992-93 and 1993-94 Public Schools, Grades 11-12

Student Groups	Percent of Students Taking At Least One Exam		Percent of Examinees Scoring 3-5 on At Least One Exam		Percent of Exams With Scores of 3 or Above	
	1992-93	1993-94	1992-93	1993-94	1992-93	1993-94
All	4.0	4.6	68.6	70.6	67.0	68.6
Female	4.4	5.0	66.0	69.4	64.4	67.5
Male	3.6	4.1	71.7	72.0	69.6	69.8
American Indian	5.0	4.9	68.3	70.7	66.2	66.3
African American	1.0	1.0	42.6	52.7	41.7	48.5
Asian American	17.0	18.2	76.5	77.7	74.1	75.7
Hispanic	1.8	2.2	58.7	60.3	54.2	54.7
White	5.2	6.0	70.3	72.2	68.6	70.4

Data Sources: TEA analysis of CEEB 1992-93 and 1993-94 Texas AP public school examination data using grade level, gender and ethnicity from TEA PEIMS as available and from AP files otherwise.

From 1992-93 to 1993-94, the percentage of 11th and 12th graders taking AP examinations in Texas public schools increased from 4.0 to 4.6 percent. Asian American, Hispanic, and White students accounted for the increase. The percentage of Texas examinees with at least one 3 to 5 exam score increased by 2.0 percentage points, while the percentage of 3 to 5 scores went up by almost the same amount. Females posted relatively larger gains for the same score percentages than males.

the 1995-96 AEIS reports. As noted earlier, AEIS reports present data for the total group at the district, regional, and state levels, and the campus level where appropriate. By law, data are disaggregated by gender (male and female) and ethnicity (American Indian/Native American, Asian American/Pacific Islander, African American, Hispanic, and White). Where possible, AEIS data are also disaggregated by socioeconomic status; the data agreement with the College Board precludes reporting by socioeconomic status for SAT and AP examination scores.

Reporting and Analysis of AP Data

The AEIS report is the primary mechanism for reporting indicator data for Texas public schools individually at the state, region, district, and campus levels. Data are reported for the two most recent years for which data are available. More detailed and comprehensive statewide indicator information is also provided through reports published by TEA of system-wide data or data related to individual indicators. *Snapshot: School District Profiles* (e.g., TEA, 1995g) provides an annual summary of profile and indicator information at the state, region, and district levels.

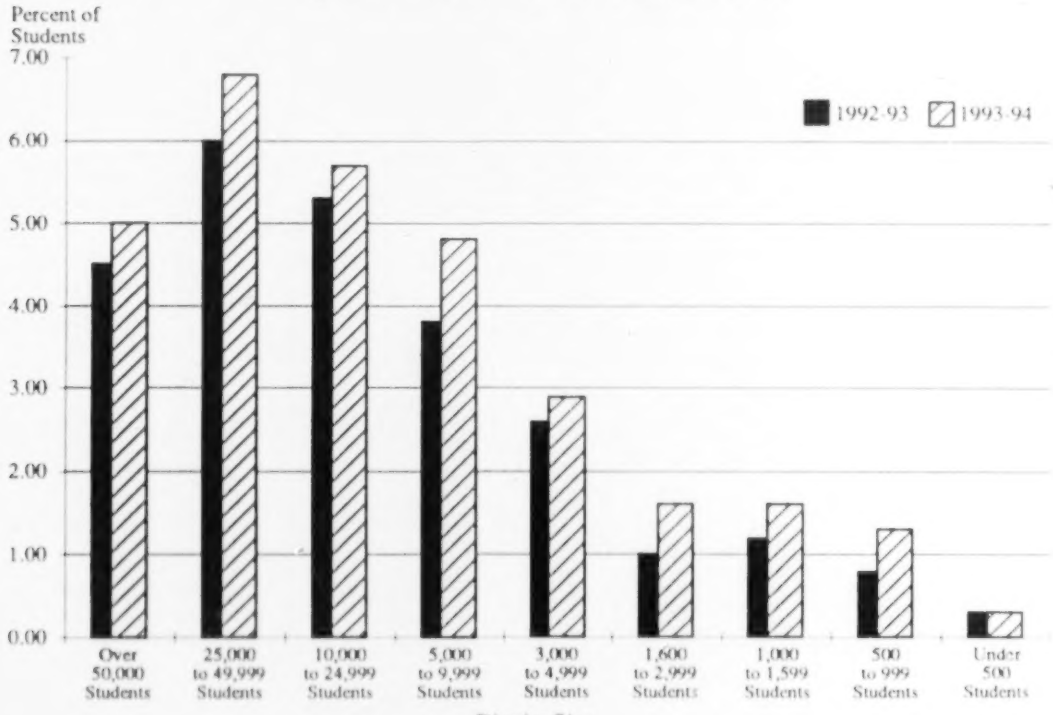
Report on Public School Dropouts (e.g., TEA, 1995e) reports state, region, county, district, and campus dropout rates, as well as analysis of dropout rate trends. *Results of College Admissions Testing in Texas for Graduating Seniors* (e.g., TEA, 1995f) reports state, region, district, and campus SAT and ACT results, with analysis of participation and performance trends. Both reports are published annually. *Report on Grade Level Retention of Texas Students* (e.g., TEA, 1995d), published biennially, provides state level analysis of student retention. Annual state reports of results on the Texas Assessment of Academic Skills (TAAS), the state criterion-referenced test administered in Grade 3-8 and 10, are also published in *Texas Assessment of Academic Skills and End-of-Course Examinations Student Performance Results Statewide and Regional Results* (e.g., TEA, 1995h).

In addition to possible reporting of AP examination data in the AEIS reports as an additional indicator, more detailed research analysis and reporting of AP examination data by TEA may include annual or biennial reporting of AP results and incorporation of AP results into the Statewide Texas Education Progress Study (STEPS) framework. STEPS is an ongoing data collection and analysis project beginning in 1995-96 that will examine the progress of the Texas public education system as a whole by exploring the relationships between inputs, processes, contexts, and performance.

Primary areas for additional study stem from state-level implementation of statutory programs and policies developed to improve the quality of education, such as the Texas Advanced Placement Incentive Program and wider reporting of AP indicator data — both of which are expected to fuel growth in the number of students and schools that participate in the AP program of courses and examinations. The recommended high school program, which can include both AP and IB examinations, will be reported as a statutory indicator beginning with the 1995-96 AEIS reports, which may further stimulate changes in course-taking patterns. School districts will also begin identifying IB courses in the data submitted to TEA. Participation in IB will be monitored and can be expected to increase as a result of the Texas Advanced Placement Incentive Program, which may generate interest in exploring possible IB examination performance indicators.

Various types of AP-related research and analysis will be of interest to educators and policy makers for evaluating existing policies and informing decision making on policy questions. One of the most important of these types of questions is the extent to which taking AP, other types of advanced and honors courses (e.g., Herr, 1993), and courses preceding advanced courses relate to students' AP examination scores, other types of test scores, and overall academic success in high school. Students' course work and course-taking patterns fall into a realm of control that can be directly addressed by educators and policy makers. Trends in students' course taking patterns, campus and district availability of AP and various other courses, and examination scores are also of

Figure 2
Percent of Texas Students, Grades 11-12, Taking at Least One AP Exam By District Size — 1992-93 and 1993-94



Data Sources: TEA analysis of CEEB 1992-93 and 1993-94 Texas public school AP exam data and TEA PEIMS 1992-93 and 1993-94 enrollment data using examinee grade level from PEIMS as available and from AP files otherwise.

Overall, the percentage of 11th and 12th graders taking at least one AP examination in Texas public school districts tended to be higher in 1993-94 than in 1992-93. These percentages are higher as district size increases up to 50,000 students.

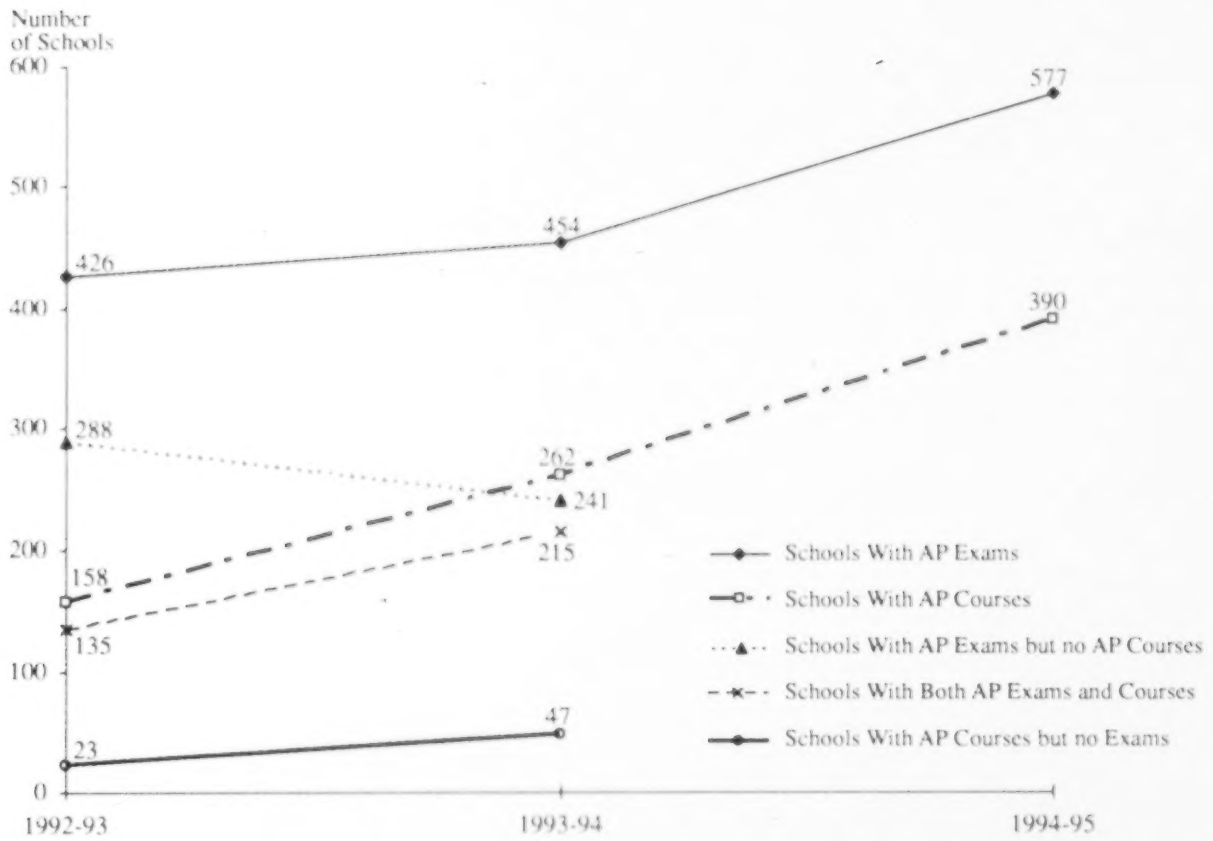
interest, as well as the longer-term benefit of AP participation once students are in postsecondary education.

Other types of questions concern the degree to which student and campus AP performance relates to education inputs (such as instructional materials and staff development efforts) and instructional processes (such as year-round versus the traditional calendar) and the extent to which these relationships vary depending on contextual factors (such as district wealth, geographic region, and campus size) and whether or not these relationships are consistent with those for other indicators of student, campus, and district performance (such as TAAS passing rates, SAT and ACT scores, IB scores, school completion rates, and college attendance and completion rates).

General Issues

As is the case for any examination not required of all students, such as the SAT, ACT, and especially AP examinations, the extent of student participation can be affected by any number of factors, some of which are especially important if schools or districts will be compared based on participation. First, although the $72 fee per AP examination, which provides the

Figure 3
Number of Texas Public Schools With AP Courses and Exams — 1992-93 to 1994-95



Data Sources: CEEB (1995c); TEA analysis of 1992-93 and 1993-94 Texas public school AP exam data; and analysis of 1992-93 to 1994-95 TEA PEIMS course completion data, using only last semester completion of courses as the basis for numerical counts. *Note: 1994-95 data were not available for all counts.*

Since 1992-93, the number of Texas public schools with AP examinees has increased substantially, as well as the number of schools with students completing AP courses. Only a small number of schools had students completing AP courses without taking the exams, and the number of schools with AP examinees and no AP courses decreased from 1992-93 to 1993-94.

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Table 8
Texas Advanced Courses and Students with Advanced Course Completions: 1992-93 to 1994-95 (Grades 9-12)

Statistics	1992-93			1993-94			1994-95		
	AP	Non-AP	All Advanced	AP	Non-AP	All Advanced	AP	Non-AP	All Advanced
# Students With at Least One Course Completion	11,402	93,149	98,541	21,505	96,530	106,726	32,723	102,247	117,791
# Course Completions	17,073	128,273	145,346	32,667	131,724	164,391	51,270	137,013	188,283
# Average Courses Completed Per Student	1.5	1.4	1.5	1.5	1.4	1.5	1.6	1.3	1.6

Data Sources: TEA analysis of 1992-93 to 1994-95 TEA PEIMS course completion data, using only last semester completion of courses as the basis for numerical counts.

Although the number of students with AP and non-AP advanced course completions has grown steadily over the past three years, AP courses accounted for the largest portion of the increase. The number of students completing at least one AP course almost tripled over this time period, while students enrolled in all advanced courses increased by 20 percent; the number of AP courses completed per student also went up.

potential for high school students to earn college credit with qualifying scores, is much less than the cost of taking a college course, the fee can be prohibitive for many students. The examination cost is becoming less of an issue with College Board fee reductions, the advent of the Texas Advanced Placement Incentive Program, and other locally sponsored fee reductions and waivers. These efforts usually include special provisions for assisting economically disadvantaged students. Still, as long as examination fee costs remain as a potential barrier to campus or district participation rates, AP indicator results among campuses and districts should be interpreted and used cautiously and appropriately.

Second, Texas data show that thus far small schools and small districts typically have lower AP examination participation than large schools and districts. Small numbers of students may make it more difficult for schools or districts to offer AP or other advanced courses. However, small districts have a history of collaborating to meet the educational needs of students. Also, solutions through technology, such as increased access to distance learning courses, are becoming more of a reality as the Long-Range Plan for Technology is implemented (TEA, 1995b). A special note should also be made of schools that have not previously or recently shown any AP examination participation. A reasonable expectation is that schools with no previous AP examination experience may be at a disadvantage when compared to schools with prior experience.

As previously noted, all performance indicators are not used for accountability or accreditation purposes; however, there is the assumption that the reporting of additional indicators will encourage schools and districts to appropriately focus educational efforts in those areas and across the full diversity of student groups. For this reason, comparisons of campuses or districts with similar student demographics, as well as comparisons to the state are important, along with reporting of AP participation and performance disaggregated by ethnicity. Other considerations for interpretation include making comparisons among schools or districts that are similar in staff, school, and academic characteristics, as well as student demographics; noting the extent of AP participation and performance equities or inequities among different groups of students; and noting the subject diversity in AP course and examination participation. Finally, interpretation of any indicator must be based on the recognition that indicator data based on small numbers of students (usually less than 30) is generally more subject to year-to-year fluctuation unrelated to educational conditions and must be masked entirely when numbers are small enough to compromise the confidentiality of individual student data.

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COMPLIANCE STATEMENT

TITLE VI, CIVIL RIGHTS ACT OF 1964; THE MODIFIED COURT ORDER, CIVIL ACTION 5281, FEDERAL DISTRICT COURT, EASTERN DISTRICT OF TEXAS, TYLER DIVISION

Reviews of local education agencies pertaining to compliance with Title VI Civil Rights Act of 1964 and with specific requirements of the Modified Court Order, Civil Action No. 5281, Federal District Court, Eastern District of Texas, Tyler Division are conducted periodically by staff representatives of the Texas Education Agency. These reviews cover at least the following policies and practices:

(1) acceptance policies on student transfers from other school districts;

(2) operation of school bus routes or runs on a nonsegregated basis;

(3) nondiscrimination in extracurricular activities and the use of school facilities;

(4) nondiscriminatory practices in the hiring, assigning, promoting, paying, demoting, reassigning, or dismissing of faculty and staff members who work with children;

(5) enrollment and assignment of students without discrimination on the basis of race, color, or national origin;

(6) nondiscriminatory practices relating to the use of a student's first language; and

(7) evidence of published procedures for hearing complaints and grievances.

In addition to conducting reviews, the Texas Education Agency staff representatives check complaints of discrimination made by a citizen or citizens residing in a school district where it is alleged discriminatory practices have occurred or are occurring.

Where a violation of Title VI of the Civil Rights Act is found, the findings are reported to the Office for Civil Rights, U.S. Department of Education.

If there is a direct violation of the Court Order in Civil Action No. 5281 that cannot be cleared through negotiation, the sanctions required by the Court Order are applied.

TITLE VII, CIVIL RIGHTS ACT OF 1964 AS AMENDED BY THE EQUAL EMPLOYMENT OPPORTUNITY ACT OF 1972; EXECUTIVE ORDERS 11246 AND 11375; EQUAL PAY ACT OF 1964; TITLE IX, EDUCATION AMENDMENTS; REHABILITATION ACT OF 1973 AS AMENDED; 1974 AMENDMENTS TO THE WAGE-HOUR LAW EXPANDING THE AGE DISCRIMINATION IN EMPLOYMENT ACT OF 1967; VIETNAM ERA VETERANS READJUSTMENT ASSISTANCE ACT OF 1972 AS AMENDED; IMMIGRATION REFORM AND CONTROL ACT OF 1986; AMERICANS WITH DISABILITIES ACT OF 1990; AND THE CIVIL RIGHTS ACT OF 1991.

The Texas Education Agency shall comply fully with the nondiscrimination provisions of all federal and state laws, rules, and regulations by assuring that no person shall be excluded from consideration for recruitment, selection, appointment, training, promotion, retention, or any other personnel action, or be denied any benefits or participation in any educational programs or activities which it operates on the grounds of race, religion, color, national origin, sex, disability, age, or veteran status (except where age, sex, or disability constitutes a bona fide occupational qualification necessary to proper and efficient administration). The Texas Education Agency is an Equal Employment Opportunity/Affirmative Action employer.

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